

Amendments to the Claims:

The following will replace all prior versions and listings of claims in the application:

1. (Currently amended) An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of:

(a) ~~a first nucleotide sequence which is a polymorphic variant of a reference sequence for the β_2 -Adrenergic receptor (β_2 AR) gene, wherein the polymorphic variant is a β_2 AR-isogene that encodes a β_2 AR polypeptide capable of being activated by a β -agonist, wherein the first nucleotide sequence is selected from the group consisting of SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, and SEQ ID NO:28; and~~

(b) ~~a second nucleotide sequence which is complementary to the first nucleotide sequence~~the complement of SEQ ID NO:21.

2. (Canceled)

3. (Original) The isolated polynucleotide of claim 1 which is a DNA molecule and comprises both the first and second nucleotide sequences and further comprises expression regulatory elements operably linked to the first nucleotide sequence.

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Withdrawn) A composition comprising at least one genotyping oligonucleotide for detecting a polymorphism in the β_2 -adrenergic receptor (β_2 AR) gene at a polymorphic site selected from the group consisting of PS2 and PS5, wherein the oligonucleotide is at least 15 nucleotides long.

8. (Withdrawn) The composition of claim 7, wherein the genotyping oligonucleotide is an allele-specific oligonucleotide that specifically hybridizes to an allele of the β_2 AR gene at a region containing the polymorphic site, wherein the oligonucleotide comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS:3-6.

9-28. (Canceled)

29. (Withdrawn) A genome anthology for the β_2 -Adrenergic Receptor gene (β_2 AR) gene which comprises a set of β_2 AR isogenes defined by haplotypes 1-12 shown in Table 5, wherein the set is each member of the group of β_2 AR isogenes set forth in claim 1, and wherein each of the β_2 AR isogenes encodes a β_2 AR polypeptide capable of being activated by a β -agonist.

30. (Previously presented) The isolated polynucleotide of claim 3, wherein the DNA molecule is an expression vector.

31. (Canceled)

32. (Withdrawn) The composition of claim 7, wherein the genotyping oligonucleotide is selected from the group consisting of an allele-specific oligonucleotide primer and a primer extension oligonucleotide, wherein the allele-specific oligonucleotide primer is selected from the group consisting of SEQ ID NOS:7-14 and the primer extension oligonucleotide is selected from the group consisting of SEQ ID NOS:15-18.

33. (Withdrawn) The genome anthology of claim 29, wherein each isogene in the set is stored in a separate container.